

WHAT IS CLAIMED IS:

1. An apparatus suitable for measuring the gas generation potential of various liquids capable of producing gases, comprising:

5 a cylinder having first and second openings, capable of holding a volume of a liquid capable of generation gas;

a multi-port connector having at least first, second, third and fourth ports, wherein the first port of the connector is attached to the first opening of the cylinder;

pressure reading means attached to the second port of the connector;

10 valve means attached to the third port of the connector, the valve means suitable for charging liquids into the apparatus;

pressure relief means attached to the fourth port of the connector for exhausting gases;

and

15 plugging means attached to the second opening of the cylinder for sealing the second opening,

wherein the apparatus is capable of being sealed from loss of pressure caused by gases there inside.

2. The apparatus according to Claim 1, wherein the cylinder exhibits a volume of from about 50 to about 150 milliliters.

3. The apparatus according to Claim 2, wherein the cylinder is fabricated from a material selected from 316 stainless steel or C-22 alloy.

4. The apparatus according to Claim 3, wherein the pressure reading means is selected from analog pressure gauge, digital pressure gauge, or pressure transducer.

5. The apparatus according to Claim 4, wherein the pressure reading means is capable of indicating pressures from 0 to about 60 psig.

30 6. The apparatus according to Claim 5, wherein the valve means is a stainless steel ball valve.

7. The apparatus according to Claim 6, wherein the pressure reading means is a pressure transducer.

8. The apparatus according to Claim 7, wherein the pressure transducer is equipped with data logging software.

5 9. An apparatus suitable for measuring the gas generation potential of various liquids capable of producing gases, comprising:

a cylinder having first and second openings, capable of holding a volume of a liquid capable of generation gas, wherein the cylinder has a volume of from about 50 to about 150 milliliters;

10 a multi-port connector having at least first, second, third and fourth ports, wherein the first port of the connector is attached to the first opening of the cylinder;

a pressure transducer attached to the second port of the connector;

a ball valve attached to the third port of the connector, the valve suitable for charging liquids into the cylinder;

15 a pressure relief means attached to the fourth port of the connector for exhausting gases from the apparatus; and

plugging means attached to the second opening of the cylinder for sealing the second opening,

wherein the apparatus is capable of being sealed from loss of pressure caused by gases there inside.

20 10. A method of measuring the gas generation potential of a liquid capable of producing gases in an apparatus characterized as a cylinder having first and second openings, capable of holding a volume of liquid capable of generating gas; plugging means attached to the second opening of the cylinder for sealing the second opening; a multi-port connector having at least first, second, third and fourth ports, wherein the first port is attached to the first opening of the cylinder; pressure reading means
25 attached to the second port of the connector; valve means attached to the third port of the connector, the valve means suitable for opening and closing to allow liquid and gases to enter and exit the cylinder; and pressure relief means attached to the fourth port of the connector, wherein the fourth port is closed during the measuring operation, the method comprising the steps of:

30 a) charging the apparatus, through the valve means, with a liquid capable of generating gases;

b) sealing the apparatus from liquid and gas leaks;

c) placing the apparatus in a temperature controllable bath to generate gases from the liquid;

d) recording pressure data of the generated gases by way of pressure reading means for a period of about 16 to about 168 hours; and

e) analyzing the pressure data to determine the pressure changes, wherein pressure changes within the apparatus indicate the gas generation potential of the liquid.

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11. The method according to Claim 10, wherein the amount of liquid charged into the apparatus is from about 70% to about 90% by volume of capacity.

10 12. The method according to Claim 11, wherein after step b) of sealing the apparatus from liquid and gas leaks, optionally pressurizing the apparatus to from about 2 to about 20 psig with a pad gas.

13. The method according to Claim 12, wherein the pad gas is nitrogen.

15 14. The method according to Claim 13, wherein the temperature controllable bath exhibits a temperature of from about 20° to about 65° C.

20 15. The method according to Claim 14, wherein the step of recording pressure data is performed by a pressure monitor selected from a pressure monitoring transducer, digital pressure monitoring gauge, and analog pressure monitoring gauge.

25 16. A method of measuring the gas generation potential of a liquid capable of producing gases in an apparatus characterized as a cylinder having first and second openings, capable of holding a volume of liquid capable of generating gas; plugging means attached to the second opening of the cylinder for sealing the second opening; a multi-port connector having at least first, second, third and fourth ports, wherein the first port is attached to the first opening of the cylinder; pressure reading means attached to the second port of the connector; valve means attached to the third port of the connector, the valve means suitable for opening and closing to allow liquid and gases to enter and exit the cylinder; and pressure relief means attached to the fourth port of the connector, wherein the fourth port is closed during the measuring operation, the method comprising the steps of:

a) charging the apparatus, through the valve means, with a liquid capable of generating gases;

b) sealing the apparatus from liquid and gas leaks;

- 5 c) pressurizing the apparatus with a gas to a pressure of from about 2 to about 20
 psig;
- d) placing the apparatus in a temperature controllable bath to generate gases from
 the liquid;
- 5 e) recording pressure data of the generated gases by way of pressure reading means
 for a period of about 16 to about 168 hours; and
- f) analyzing the pressure data to determine the pressure changes,
 wherein pressure changes within the apparatus indicate the gas generation potential of the liquid.

10 17. The method according to Claim 16, wherein the pressurizing gas is nitrogen.

 18. The method according to Claim 17, wherein the temperature controllable bath
 exhibits a temperature of from about 20° to about 65° C.

15 19. The method according to Claim 18, wherein the step of recording pressure data
 is performed by a pressure monitor selected from a pressure monitoring transducer, digital pressure
 monitoring gauge, and analog pressure monitoring gauge.